

In the Claims

1-17 (canceled).

18 (currently amended). A polynucleotide expression construct comprising:

a polynucleotide sequence encoding a plant aromatic amino acid decarboxylase, or an enzymatically active fragment thereof, wherein said decarboxylase, ~~or fragment thereof, comprises~~ decarboxylase activity on phenylalanine comprises the amino acid sequence shown in SEQ ID NO: 5, SEQ ID NO: 7, SEQ ID NO: 9, or SEQ ID NO: 13, or an enzymatically active fragment thereof, or said decarboxylase has 70% or greater sequence identity with the amino acid sequence shown in SEQ ID NO: 5, SEQ ID NO: 7, SEQ ID NO: 9, or SEQ ID NO: 13, and exhibits aromatic amino acid decarboxylase enzymatic activity.

19-33 (canceled).

34 (currently amended). A cell transformed with:

a polynucleotide encoding a plant aromatic amino acid decarboxylase, or an enzymatically active fragment thereof, wherein said decarboxylase, ~~or fragment thereof, comprises decarboxylase activity on phenylalanine~~ comprises the amino acid sequence shown in SEQ ID NO: 5, SEQ ID NO: 7, SEQ ID NO: 9, or SEQ ID NO: 13, or an enzymatically active fragment thereof, or said decarboxylase has 70% or greater sequence identity with the amino acid sequence shown in SEQ ID NO: 5, SEQ ID NO: 7, SEQ ID NO: 9, or SEQ ID NO: 13, and exhibits aromatic amino acid decarboxylase enzymatic activity.

35 (previously presented). The cell according to claim 34, wherein said polynucleotide is provided in a polynucleotide expression construct.

36 (currently amended). A plant, plant tissue, or plant cell transformed with or bred to contain:

a polynucleotide encoding a plant aromatic amino acid decarboxylase, or an enzymatically active fragment thereof, wherein said decarboxylase, ~~or fragment thereof, comprises decarboxylase activity on phenylalanine~~ comprises the amino acid sequence shown in SEQ ID NO: 5, SEQ ID NO: 7, SEQ ID NO: 9, or SEQ ID NO: 13, or an enzymatically active fragment thereof, or said decarboxylase has 70% or greater sequence identity with the amino acid sequence shown in SEQ ID NO: 5, SEQ ID NO: 7, SEQ ID NO: 9, or SEQ ID NO: 13, and exhibits aromatic amino acid decarboxylase enzymatic activity.

37-46 (canceled).

47 (currently amended). A method for providing a plant with increased flavor or fragrance, said method comprising incorporating in said plant:

a polynucleotide encoding a plant aromatic amino acid decarboxylase, or an enzymatically active fragment thereof, wherein said decarboxylase, ~~or fragment thereof, comprises decarboxylase activity on phenylalanine~~ comprises the amino acid sequence shown in SEQ ID NO: 5, SEQ ID NO: 7, SEQ ID NO: 9, or SEQ ID NO: 13, or an enzymatically active fragment thereof, or said decarboxylase has 70% or greater sequence identity with the amino acid sequence shown in SEQ ID NO: 5, SEQ ID NO: 7, SEQ ID NO: 9, or SEQ ID NO: 13, and exhibits aromatic amino acid decarboxylase enzymatic activity;

and expressing the polypeptide encoded by said polynucleotide.

48-57 (canceled).

58 (currently amended). A transgenic plant, plant tissue, or plant cell, wherein said plant, plant tissue or plant cell comprises incorporated in the genome of said plant, plant tissue, or plant cell:

a polynucleotide encoding a plant aromatic amino acid decarboxylase, or an enzymatically active fragment thereof, wherein said decarboxylase, ~~or fragment thereof, comprises decarboxylase activity on phenylalanine~~ comprises the amino acid sequence shown in SEQ ID NO: 5, SEQ ID NO: 7, SEQ ID NO: 9, or SEQ ID NO: 13, or an enzymatically active fragment thereof, or said decarboxylase has 70% or greater sequence identity with the amino acid sequence shown in SEQ ID NO: 5, SEQ ID NO: 7, SEQ ID NO: 9, or SEQ ID NO: 13, and exhibits aromatic amino acid decarboxylase enzymatic activity.

59-95 (canceled).

96 (previously presented). The expression construct according to claim 18, wherein said decarboxylase comprises the amino acid sequence shown in SEQ ID NO: 5, or an enzymatically active fragment thereof.

97 (previously presented). The expression construct according to claim 18, wherein said decarboxylase comprises the amino acid sequence shown in SEQ ID NO: 7, or an enzymatically active fragment thereof.

98 (previously presented). The expression construct according to claim 18, wherein said decarboxylase comprises the amino acid sequence shown in SEQ ID NO: 9, or an enzymatically active fragment thereof.

99 (previously presented). The expression construct according to claim 18, wherein said decarboxylase comprises the amino acid sequence shown in SEQ ID NO: 13, or an enzymatically active fragment thereof.

100 (previously presented). The expression construct according to claim 18, wherein said polynucleotide comprises the nucleotide sequence shown in SEQ ID NO: 4, SEQ ID NO: 6, SEQ ID NO: 8, or SEQ ID NO: 12, or said polynucleotide comprises a nucleotide sequence that hybridizes

under stringent hybridization conditions with the nucleotide sequence shown in SEQ ID NO: 4, SEQ ID NO: 6, SEQ ID NO: 8, or SEQ ID NO: 12, or the complement thereof, and said polynucleotide encodes a polypeptide having aromatic amino acid decarboxylase enzymatic activity.

101 (previously presented). The expression construct according to claim 18, wherein said polynucleotide comprises the nucleotide sequence shown in SEQ ID NO: 4.

102 (previously presented). The expression construct according to claim 18, wherein said polynucleotide comprises the nucleotide sequence shown in SEQ ID NO: 6.

103 (previously presented). The expression construct according to claim 18, wherein said polynucleotide comprises the nucleotide sequence shown in SEQ ID NO: 8.

104 (previously presented). The expression construct according to claim 18, wherein said polynucleotide comprises the nucleotide sequence shown in SEQ ID NO: 12.

105 (previously presented). The expression construct according to claim 18, wherein said expression construct comprises one or more regulatory elements operably linked to said polynucleotide.

106 (previously presented). The expression construct according to claim 105, wherein said regulatory element is one or more of a promoter, transcription termination sequence, translation termination sequence, enhancer, or a polyadenylation sequence.

107 (previously presented). The expression construct according to claim 106, wherein said promoter is a promoter functional in a plant cell.

108 (previously presented). The expression construct according to claim 107, wherein said promoter provides for overexpression of said polynucleotide sequence.

109 (previously presented). The expression construct according to claim 107, wherein said promoter is a seed-specific promoter, a tissue-specific promoter, a constitutive promoter, a developmentally-regulated promoter, or an inducible promoter.

110 (previously presented). The expression construct according to claim 109, wherein said constitutive promoter is a CaMV promoter, ubiquitin promoter, actin promoter, or NOS promoter.

111 (previously presented). The expression construct according to claim 109, wherein said tissue-specific promoter is a fruit-specific promoter.

112 (previously presented). The expression construct according to claim 111, wherein said fruit-specific promoter is an E8 promoter, a hybrid E4/E8 promoter, an LeExp-1 promoter, or a polygalacturonase- β subunit promoter.

113 (previously presented). The expression construct according to claim 109, wherein said tissue-specific promoter is a flower organ-specific promoter.

114 (new). The plant, plant tissue, or plant cell according to claim 36, wherein said polynucleotide is provided in a polynucleotide expression construct.

115 (new). The plant, plant tissue, or plant cell according to claim 36, wherein said decarboxylase comprises the amino acid sequence shown in SEQ ID NO: 5, or an enzymatically active fragment thereof.

116 (new). The plant, plant tissue, or plant cell according to claim 36, wherein said decarboxylase comprises the amino acid sequence shown in SEQ ID NO: 7, or an enzymatically active fragment thereof.

117 (new). The plant, plant tissue, or plant cell according to claim 36, wherein said decarboxylase comprises the amino acid sequence shown in SEQ ID NO: 9, or an enzymatically active fragment thereof.

118 (new). The plant, plant tissue, or plant cell according to claim 36, wherein said decarboxylase comprises the amino acid sequence shown in SEQ ID NO: 13, or an enzymatically active fragment thereof.

119 (new). The plant, plant tissue, or plant cell according to claim 36, wherein said plant is a tomato, pea, alfalfa, melon, chickpea, chicory, clover, kale, lentil, soybean, tobacco, potato, sweet potato, radish, cabbage, rape, grape, sunflower, lettuce, cucumber, watermelon, apple, citrus, orange, lemon, tangerine, grapefruit, lime, pear, plum, peach, fig, currant, muskmelon, squash, cherry, sugar beet, tea, strawberry, blackberry, blueberry, raspberry, loganberry, rose, chrysanthemum, sweet pepper, eggplant, cotton, rice, wheat, barley, oats, sorghum, maize, sugarcane, pineapple, onion, bananas, coconut, lilies, grasses, millet, rose, petunia, carnation, orchid, tulip, or gardenia.

120 (new). The method according to claim 47, wherein said polynucleotide is provided in a polynucleotide expression construct.

121 (new). The method according to claim 47, wherein said decarboxylase comprises the amino acid sequence shown in SEQ ID NO: 5, or an enzymatically active fragment thereof.

122 (new). The method according to claim 47, wherein said decarboxylase comprises the amino acid sequence shown in SEQ ID NO: 7, or an enzymatically active fragment thereof.

123 (new). The method according to claim 47, wherein said decarboxylase comprises the amino acid sequence shown in SEQ ID NO: 9, or an enzymatically active fragment thereof.

124 (new). The method according to claim 47, wherein said decarboxylase comprises the amino acid sequence shown in SEQ ID NO: 13, or an enzymatically active fragment thereof.

125 (new). The method according to claim 47, wherein said plant is a tomato, pea, alfalfa, melon, chickpea, chicory, clover, kale, lentil, soybean, tobacco, potato, sweet potato, radish, cabbage, rape, grape, sunflower, lettuce, cucumber, watermelon, apple, citrus, orange, lemon, tangerine, grapefruit, lime, pear, plum, peach, fig, currant, muskmelon, squash, cherry, sugar beet, tea, strawberry, blackberry, blueberry, raspberry, loganberry, rose, chrysanthemum, sweet pepper, eggplant, cotton, rice, wheat, barley, oats, sorghum, maize, sugarcane, pineapple, onion, bananas, coconut, lilies, grasses, millet, rose, petunia, carnation, orchid, tulip, or gardenia.

126 (new). The transgenic plant, plant tissue, or plant cell according to claim 58, wherein said polynucleotide is provided in a polynucleotide expression construct.

127 (new). The transgenic plant, plant tissue, or plant cell according to claim 58, wherein said decarboxylase comprises the amino acid sequence shown in SEQ ID NO: 5, or an enzymatically active fragment thereof.

128 (new). The transgenic plant, plant tissue, or plant cell according to claim 58, wherein said decarboxylase comprises the amino acid sequence shown in SEQ ID NO: 7, or an enzymatically active fragment thereof.

129 (new). The transgenic plant, plant tissue, or plant cell according to claim 58, wherein said decarboxylase comprises the amino acid sequence shown in SEQ ID NO: 9, or an enzymatically active fragment thereof.

130 (new). The transgenic plant, plant tissue, or plant cell according to claim 58, wherein said decarboxylase comprises the amino acid sequence shown in SEQ ID NO: 13, or an enzymatically active fragment thereof.

131 (new). The transgenic plant, plant tissue, or plant cell according to claim 58, wherein said plant is a tomato, pea, alfalfa, melon, chickpea, chicory, clover, kale, lentil, soybean, tobacco, potato, sweet potato, radish, cabbage, rape, grape, sunflower, lettuce, cucumber, watermelon, apple, citrus, orange, lemon, tangerine, grapefruit, lime, pear, plum, peach, fig, currant, muskmelon, squash, cherry, sugar beet, tea, strawberry, blackberry, blueberry, raspberry, loganberry, rose, chrysanthemum, sweet pepper, eggplant, cotton, rice, wheat, barley, oats, sorghum, maize, sugarcane, pineapple, onion, bananas, coconut, lilies, grasses, millet, rose, petunia, carnation, orchid, tulip, or gardenia.